

CLAIMS

1. A method for transmitting data from a remote reporting unit via a wireless
2 communication network, comprising operations of:
generating a status message, said status message having a value representing one
4 of multiple alternative conditions detected by a remote unit;
applying a predetermined mapping scheme to convert said value into a
6 consolidated output;
generating a feature code comprising the consolidated output; and transmitting
8 the feature code to a call processing facility.

2. The method of claim 1, where the operation of applying a predetermined
2 mapping scheme comprises:
multiplying each status message by a different predetermined coefficient to
4 create a corresponding multiplicative product; and
adding the multiplicative products;
6 wherein the coefficients are selected to enable reconstruction of each status
message by repeated division of the consolidated output by the coefficients.

3. The method of claim 1, wherein said status message comprises a latitude, a
2 longitude, an event code representing an occurrence of one or more predetermined
events, and a state code representing one or more states.

4. The method of claim 3, where the operation of applying a predetermined
2 mapping scheme comprises:
multiplying the latitude status message by a first coefficient;
4 multiplying the longitude status message by a second coefficient;
multiplying the event code by a third coefficient; and
6 adding results of the foregoing multiplication operations to the state to create a
corresponding multiplicative product.

5. A signal-bearing medium tangibly embodying a program of machine-readable
instructions executable by a digital processing apparatus to perform operations for
transmitting data from a remote unit via a telephone network, said operations
comprising:

a remote reporting unit for generating a status message, said status message
having a value representing one of multiple alternative conditions detected by the
remote reporting unit;

the remote unit optimizing the status message comprising operations of:

applying a predetermined mapping scheme to convert said value into a
consolidated output; and

the remote unit generating a feature code comprising the consolidated output,
and transmitting the feature code to a call processing facility.

6. The medium of claim 5, wherein the operation of the remote unit applying a
predetermined mapping scheme comprises:

multiplying each status message by a different predetermined coefficient to
create a corresponding multiplicative product; and

adding the multiplicative products;

where the coefficients are selected to enable reconstruction of the status
messages by repeated division of the consolidated output by the coefficients.

7. A remote reporting unit, comprising:

a first sensor for sensing an first event and generating a first status;

a second sensor for sensing a second event and generating a second status;

a wireless transmitter;

data processing circuitry, coupled to said first sensor, second sensor, and said
transmitter, configured to transmit reports of the events and status by performing
operations comprising:

generating a status message, said status message having a value representing one
of multiple alternative conditions detected by the first and second sensors;

optimizing the status message by applying a predetermined mapping scheme to
the status message to convert the value into a consolidated output;

generating a feature code comprising the consolidated output; and

transmitting the feature code to a call processing facility using said wireless

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